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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/792,169

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Dana R. Coldren

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EXAMINER

KIM, CHRISTOPHER S

ART UNIT

PAPER NUMBER

3752

MAIL DATE

DELIVERY MODE

08/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/792,169

Applicant(s)

COLDREN ET AL.

Examiner

Christopher S. Kim

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3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 May 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 1-10, 17 and 18 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-16, 19 and 20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>3/3/04; 8/31/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Invention II, Species A in the reply filed on January 3, 2007 and Subspecies cc in the reply filed on May 7, 2007 is acknowledged. The traversal is on the ground(s) that (1) it is unclear what supposedly materially different fuel injection method could be practiced by the claimed injector that does not require equalizing opening and closing pressure forces on the needle valve member and (2) there is no basis for the election requirement of the subspecies. This is not found persuasive because (1) apparatus claim 1 does not recite equalizing opening and closing pressure forces on a needle valve member and therefore can be used to practice a method that does not require such and (2) applicant is directed to MPEP 801-803.02 and 2173.05(h) .

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 1-10, 17 and 18 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Invention, Species and/or Subspecies, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on January 3, 2007 and in the reply filed on May 7, 2007.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 11-16, 19 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The format of amended claim 11 appears to list four available end modes – each indented step following the recitation “...performing a selected one of:” The disclosure, as originally filed, fails to disclose that “providing a fuel injector with a structure compatible with performing each of the three available end modes” in itself is an end mode.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 11-16, 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites the limitation “pressure control valve” in line 10. There is insufficient antecedent basis for this limitation in the claim.

The format of amended claim 11 appears to list four available end modes – each indented step following the recitation “...performing a selected one of:” It is uncertain

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whether claim 11 recites four possible end modes in which only one needs to be performed or three end modes in which only one needs to be performed.

Claim 11 recites "...equalizing opening and closing pressure forces on a needle valve member to move the needle valve member toward the closed position with a spring force..." in lines 13-14 and similarly in lines 17-18. It is uncertain how the spring force moves the needle valve member when the opening and closing pressure forces on the needle valve member are equalized. Arguably, the "closing pressure force" would also include the "spring force."

Claim 11 recites "...providing a fuel injector..." in line 20. It appears to be a double inclusion of the "fuel injector" recited in line 1 and the fuel injector components recited throughout lines 3-19.

Claim 11 recites "...structures..." in line 20. It appears to be a double inclusion of the fuel injector components recited throughout lines 3-19.

Claim 12 recites the limitation "second electrical actuator" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 14 recites the limitation "second electrical actuator" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claim 15 recites "...moving the needle control valve from a first position to a second position and then back to the first position while the first electrical actuator remains energized." It contradicts the step "...moving the needle control valve to the second position after de-energizing the first electrical actuator..." recited in parent claim 11.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 11-14, 16 and 19 are rejected under 35 U.S.C. 102(a) as being anticipated by Egler (EP 1 316 717 A2).

Egler discloses a method of injecting fuel from a fuel injector comprising:

raising fuel pressure in a nozzle chamber 40 at least in part by energizing
a first electrical actuator 61;

including the step of:

moving a plunger 18 into a fuel pressurization chamber 22;

opening a single nozzle outlet set 32 at least in part by positioning a
needle control valve 68 at a first position that fluidly connects a needle control chamber
52 to a low pressure passage 70;

by performing one of:

energizing and de-energizing second electrical actuator 69;

closing the single nozzle outlet set 32 by performing:

equalizing opening and closing pressure forces on a needle valve
member 28 to move the needle valve member 28 toward the closed position with the

spring 44 force by moving the needle control valve 68 to the second position after de-energizing the first electrical actuator 66.

Claim Rejections - 35 USC § 102/103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 20 is rejected under 35 U.S.C. 102(a) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Egler (EP 1 316 717 A2).

Egler teaches an integral plunger and tappet 18. Applicant's claimed plunger is equivalent to the bottom half of Egler's piston 18, and applicant's claimed tappet is equivalent to the top half of Egler's piston 18.

Alternatively, even if claim 20 requires a separate plunger and tappet, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have provided a separate plunger and tappet, since it has been held that constructing a formerly integral structure in various elements involves only routine skill in the art. *Nerwin v. Erlichman*, 168 USPQ 177, 179.

Double Patenting

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent

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and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

12. Claims 11-16, 19 and 20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 8-13 of U.S. Patent No.

7,111,613. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the '613 patent discloses the claimed invention.

13. Claims 11-16, 19 and 20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 9-19 of U.S. Patent No.

7,134,616. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claims of the '616 patent discloses the claimed invention.

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (571) 272-4905. The examiner can normally be reached on Monday - Friday, 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on (571) 272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Christopher S. Kim
Primary Examiner
Art Unit 3752

CK